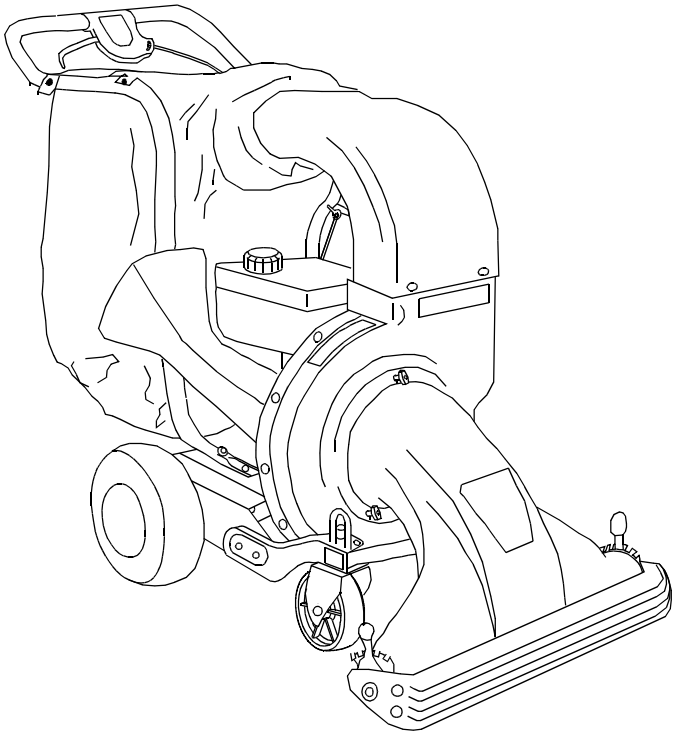
YARD-MAN by MTD

OPERATOR'S MANUAL



CHIPPER-SHREDDER-VACUUM

MODEL 203B

MTD For A Growing World.

IMPORTANT: READ SAFETY RULES AND INSTRUCTIONS CAREFULLY

Warning: This unit is equipped with an internal combustion engine and should not be used on or near any unimproved forest-covered, brush-covered or grass-covered land unless the engine's exhaust system is equipped with a spark arrester meeting applicable local or state laws (if any). If a spark arrester is used, it should be maintained in effective working order by the operator. In the State of California the above is required by law (Section 4442 of the California Public Resources Code). Other states may have similar laws. Federal laws apply on federal lands. A spark arrester for the muffler is available through your nearest engine authorized service dealer or contact the service department, P.O. Box 368022 Cleveland, Ohio 44136-9722.

MTD PRODUCTS INC. P.O. BOX 368022 CLEVELAND, OHIO 44136-9722

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FORM NO. 770-10023A
(5/99)

SECTION 1: FINDING YOUR MODEL NUMBER

This Operator's Manual is an important part of your new chipper-shredder-vacuum. It will help you assemble, prepare and maintain your unit. Please read and understand what it says. Before you start to prepare your chipper-shredder-vacuum for its first use, please locate the model plate and copy the information from it in this Operator's Manual. The information on the model plate is very important if you need help from your dealer or the MTD customer support department.

- Every chipper-shredder-vacuum has a model plate. You can locate it by standing behind the unit in the operating position and looking down at the rear frame between the wheels. See Figure 1.

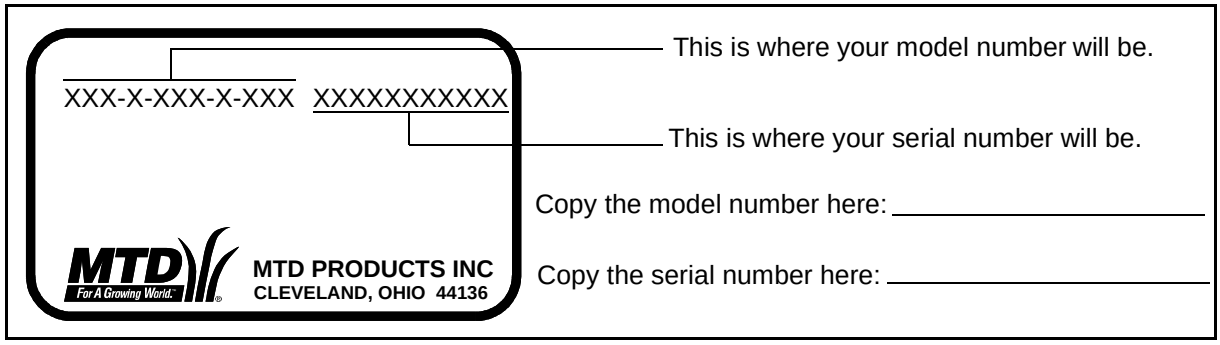


Figure 1

SECTION 2: CALLING CUSTOMER SUPPORT

- **LOCATE YOUR MODEL AND SERIAL NUMBER —** Record this information in the space provided. To find your unit's specific model number and serial number, see SECTION 1: FINDING YOUR MODEL NUMBER.
- If you are having difficulty assembling this product or if you have any questions regarding the controls, operation or maintenance of this unit, please call the Customer Support Department.
- Customer Support can be reached by dialing: **1-330-220-4MTD (4683)**
  or
  1-800-800-7310
- Please have your model number and serial number ready when you call.
- Although both numbers are important, you will be asked to enter only your ***serial*** number before your call can be processed.

SECTION 3: IMPORTANT SAFE OPERATION PRACTICES

WARNING: THIS SYMBOL POINTS OUT IMPORTANT SAFETY INSTRUCTIONS WHICH, IF NOT FOLLOWED, COULD ENDANGER THE PERSONAL SAFETY AND/OR PROPERTY OF YOURSELF AND OTHERS. READ AND FOLLOW ALL INSTRUCTIONS IN THIS MANUAL BEFORE ATTEMPTING TO OPERATE YOUR CHIPPER-VACUUM. **FAILURE TO COMPLY WITH THESE INSTRUCTIONS MAY RESULT IN PERSONAL INJURY. WHEN YOU SEE THIS SYMBOL-HEED ITS WARNING.**

WARNING: The Engine Exhaust from this product contains chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

DANGER: Your chipper-vacuum was manufactured to be operated according to the rules for safe operation in this manual. As with any type of power equipment, carelessness or error on the part of the operator can result in serious injury. This unit is capable of amputating fingers and hands and throwing objects. Failure to observe the following safety instructions could result in serious injury or death.

1. GENERAL OPERATION

- Read this operator's manual carefully in its entirety before attempting to assemble this machine. Read, understand, and follow all instructions on the machine and in the manual(s) before operation. Be completely familiar with the controls and the proper use of the machine before operating it. Keep this manual in a safe place for future and regular reference and for ordering replacement parts.
- Your chipper-vacuum is a powerful tool, not a plaything. Therefore, exercise extreme caution at all times. Your unit has been designed to perform two jobs; to chip and vacuum vegetation found in a normal yard. Do not use it for any other purpose.
- Never allow children under 16 to operate the unit. Children 16 years and older should only operate under close parental supervision. Only responsible individuals who are familiar with these rules of safe operation should be allowed to use your unit.
- Keep the area of operation clear of all persons, particularly small children and pets. Stop the engine when they are in the vicinity of the unit.
- When feeding material into this equipment, be extremely careful that pieces of metal, rocks, bottles, cans or other foreign objects are not included. Personal injury or damage to the machine could result.
- Always wear safety glasses or safety goggles, during operation and while performing an adjustment or repair, to protect eyes from foreign objects that may be thrown from the machine.
- Wear sturdy, rough-soled work shoes and close fitting slacks and shirt. Shirt and slacks that cover the arms and legs and steel-toed shoes are recommended. Do not wear loose fitting clothes or jewelry, and secure hair above shoulder length. They can be caught in moving parts. Never operate a unit in bare feet, sandals or sneakers. Wear gloves when feeding material in the chipper chute.
- Do not operate the unit while under the influence of alcohol or drugs.
- Do not overreach. Keep proper footing and balance at all times.
- Never place your hands or any part of your body or clothing near or under rotating parts. Keep clear of the discharge opening at all times. Never insert your hands or any part of your body or clothing into the nozzle, chipper chute or discharge opening as the rotating impeller can cause serious injury.
- If it is necessary for any reason to unclog the feed intake or discharge openings or to inspect or repair any part of the machine where a moving part can come in contact with your body or clothing, stop the machine, allow it to cool, disconnect the spark plug wire from the spark plug and move it away from the spark plug before attempting to unclog, inspect or repair.
- Never operate unit without vacuum bag and discharge chute properly affixed to unit. Large zippered end of bag must be closed to prevent objects from being blown out.

- Never operate unit without either the inlet nozzle or optional hose attachment properly affixed to unit. These devices shield the operator from accidental contact with the rotating impeller. Never attempt to convert the unit from nozzle to hose mode or vice versa with the engine running.
- Never attempt to remove or empty vacuum bag when engine is running. Shut the engine off and wait for the impeller to come to a complete stop before removing the bag. The impeller continues to rotate for a few seconds after the engine is shut off. Never place any part of the body in the impeller area until you are sure the impeller has stopped rotating.
- Keep all guards and safety devices in place and operating properly.
- Do not allow an accumulation of processed material to build up in the discharge area as this will prevent proper discharge and can result in kickback from the chipper chute.
- Keep your face and body back from chipper chute to avoid accidental bounce back of any material.
- If the cutting mechanism strikes a foreign object or if your machine should start making an unusual noise or vibration, immediately stop the engine, disconnect the spark plug wire and move the wire away from the spark plug. Allow the machine to stop and take the following steps.
    - Inspect for damage
    - Repair or replace any damaged parts.
    - Check for any loose parts and tighten to assure continued safe operation.
- Muffler and engine become hot and can cause a burn. Do not touch.
- Do not allow leaves or other debris to build up on engine's muffler. The debris could ignite and cause a fire.
- Do not operate engine if air cleaner or cover over carburetor air intake is removed, except for adjustment. Removal of such parts could create a fire hazard.

2. CHILDREN

Tragic accidents can occur if the operator is not alert to the presence of small children. Children are often attracted to the chipping and vacuuming activity. Never assume that children will remain where you last saw them.

- Keep children out of the work area and under the watchful eye of a responsible adult other than the operator.
- Be alert and turn the unit off if a child enters the area.
- Never allow children under the age of 16 to operate the chipper-vacuum.

3. SERVICE

- Use extreme care in handling gasoline and other fuels. They are extremely flammable and the vapors are explosive.
- Store fuel and oil in approved containers, away from heat and open flame, and out of the reach of children.
- Check and add fuel before starting the engine. Never remove gas cap or add fuel while the engine is running. Allow engine to cool at least two minutes before refueling.
- Replace gasoline cap securely and wipe off any spilled gasoline before starting the engine as it may cause a fire or explosion.
- Extinguish all cigarettes, cigars, pipes and other sources of ignition.
- Never refuel unit indoors because flammable vapors will accumulate in the area.
- Never store the machine or fuel container inside where there is an open flame or spark such as a gas hot water heater, clothes dryer or furnace.
- Never run your machine in an enclosed area as the exhaust from the engine contains carbon monoxide, which is a odorless, tasteless and deadly poisonous gas.
- To reduce fire hazard, keep engine and muffler free of leaves, grass, and other debris build-up. Clean up fuel and oil spillage. Allow unit to cool at least 5 minutes before storing.
- Before cleaning, repairing, or inspecting, make certain the impeller and all moving parts have stopped. Disconnect the spark plug wire and keep wire away from spark plug to prevent accidental starting. Do not use flammable solutions to clean air filter.
- Keep all nuts, bolts, and screws tight to be sure the equipment is in safe working condition.
- Never tamper with safety devices. Check their proper operation regularly.
- After striking a foreign object, immediately stop the engine, disconnect the spark plug wire from the spark plug, and thoroughly inspect the unit for any damage. Repair damage before starting and operating unit.
- Do not alter or tamper with the engine's governor setting. The governor controls the maximum safe operating speed of the engine. Overspeeding the engine is dangerous and will cause damage to the engine and to other moving parts of the machine.
- Check the vacuum bag frequently for wear. Replace if worn or damaged.
- Keep vacuum bag free of debris when not in use.

WARNING - YOUR RESPONSIBILITY: Restrict the use of this power machine to persons who read, understand and follow the warnings and instructions in this manual and on the machine.

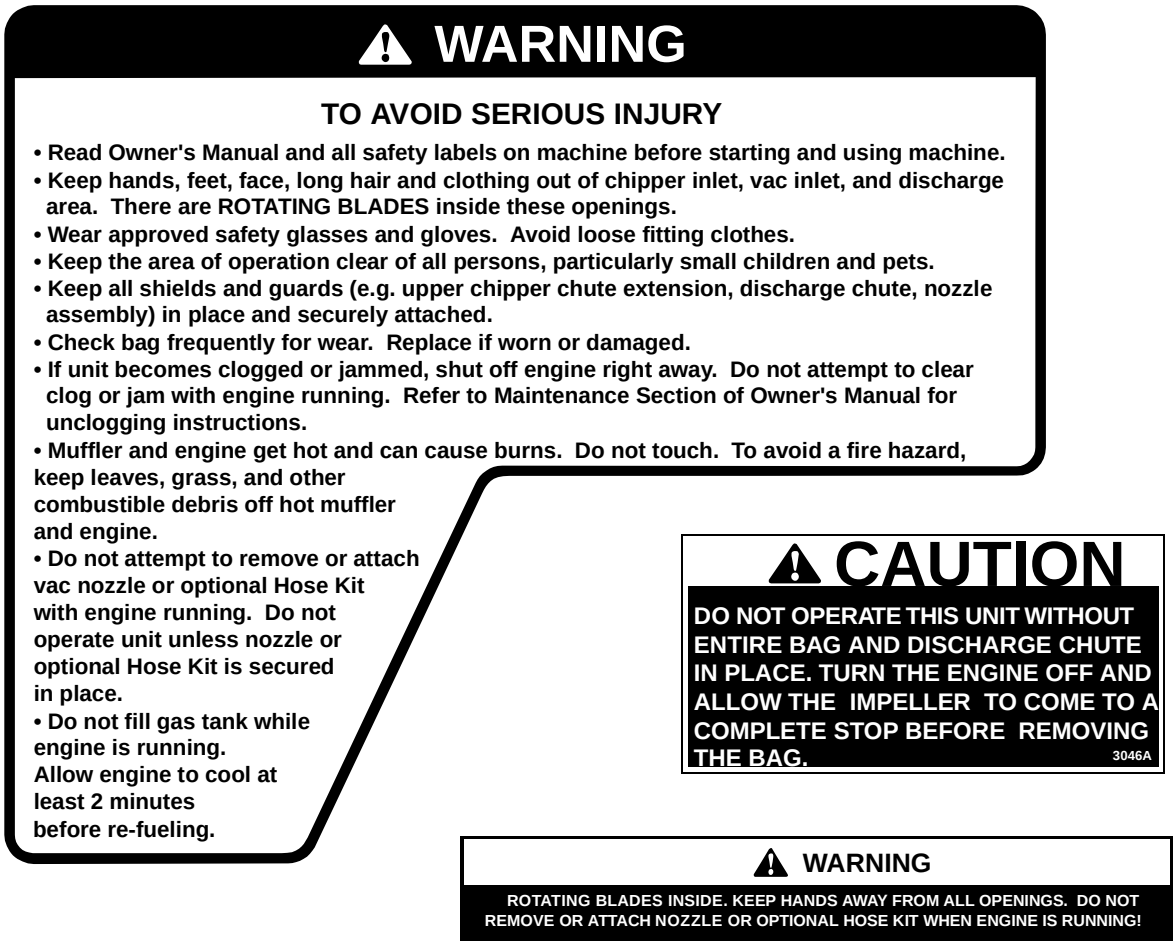

WARNING
TO AVOID SERIOUS INJURY
• Read Owner's Manual and all safety labels on machine before starting and using machine.
• Keep hands, feet, face, long hair and clothing out of chipper inlet, vac inlet, and discharge area. There are ROTATING BLADES inside these openings.
• Wear approved safety glasses and gloves. Avoid loose fitting clothes.
• Keep the area of operation clear of all persons, particularly small children and pets.
• Keep all shields and guards (e.g. upper chipper chute extension, discharge chute, nozzle assembly) in place and securely attached.
• Check bag frequently for wear. Replace if worn or damaged.
• If unit becomes clogged or jammed, shut off engine right away. Do not attempt to clear clog or jam with engine running. Refer to Maintenance Section of Owner's Manual for unclogging instructions.
• Muffler and engine get hot and can cause burns. Do not touch. To avoid a fire hazard, keep leaves, grass, and other combustible debris off hot muffler and engine.
• Do not attempt to remove or attach vac nozzle or optional Hose Kit with engine running. Do not operate unit unless nozzle or optional Hose Kit is secured in place.
• Do not fill gas tank while engine is running. Allow engine to cool at least 2 minutes before re-fueling.
CAUTION
DO NOT OPERATE THIS UNIT WITHOUT ENTIRE BAG AND DISCHARGE CHUTE IN PLACE. TURN THE ENGINE OFF AND ALLOW THE IMPELLER TO COME TO A COMPLETE STOP BEFORE REMOVING THE BAG.
3046A
WARNING
ROTATING BLADES INSIDE. KEEP HANDS AWAY FROM ALL OPENINGS. DO NOT REMOVE OR ATTACH NOZZLE OR OPTIONAL HOSE KIT WHEN ENGINE IS RUNNING!

Figure 2 Safety labels found on your unit

SECTION 4: ASSEMBLY INSTRUCTIONS

IMPORTANT: This unit is shipped WITHOUT GASOLINE or OIL in the engine. After assembly, see separate engine operator's manual for proper fuel and engine oil recommendations.

NOTE: To determine right and left hand sides of your chipper-shredder-vacuum, stand behind the unit, in the operating position.

REMOVE CHIPPER-SHREDDER-VACUUM FROM CARTON

Remove staples, break glue on top flaps, or cut tape at carton end and peel along top flap to open carton. Remove loose parts included with unit (i.e., owner's manual, etc.). Cut along dotted lines and lay carton down flat. Remove packing material and roll unit out of carton. Check carton thoroughly for loose parts.

LOOSE PARTS IN CARTON **See Figure 3.**

(1)-Nozzle
(1)-Bag
(1)-Safety Glasses

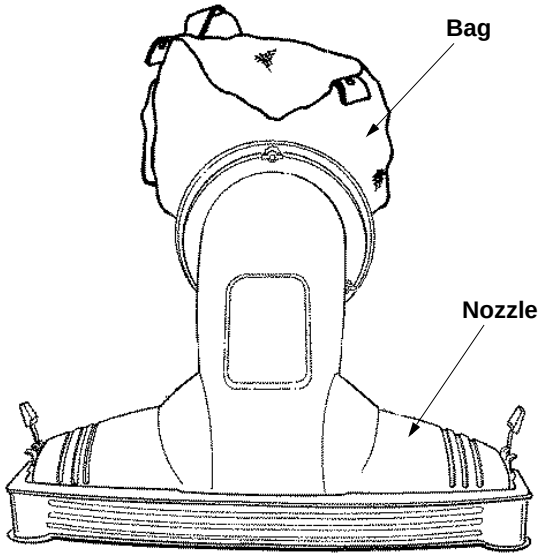


Figure 3

ATTACHING THE NOZZLE

Remove three wing nuts from the front of the chipper-shredder-vacuum. Place nozzle in position over the three studs. Secure with wing nuts just removed. See Figure 4.

NOTE: The metal tab in the nozzle must depress the safety switch on the front of the chipper-shredder-vacuum or the engine will not start.

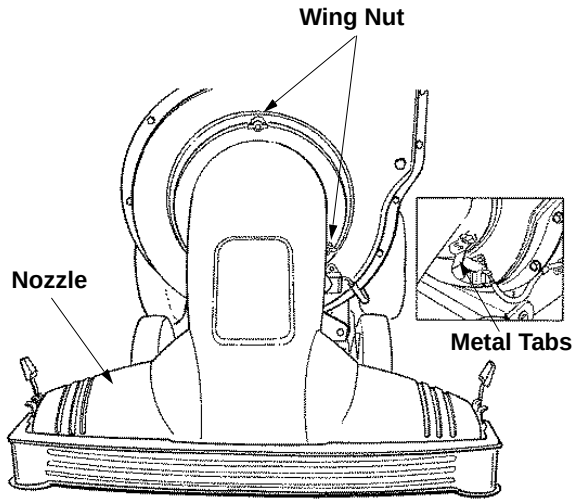


Figure 4

ATTACHING THE BAG

1. Place bag inside of handle assembly. Slip the opening on the bag over the discharge chute, making certain it is over the rib on the discharge chute.
2. Place the four straps on the top of the bag over upper handle, hooking them on studs.
3. Squeeze the clamp on the drawstring, and pull the drawstring tight. Release the clamp. See Figure 5.

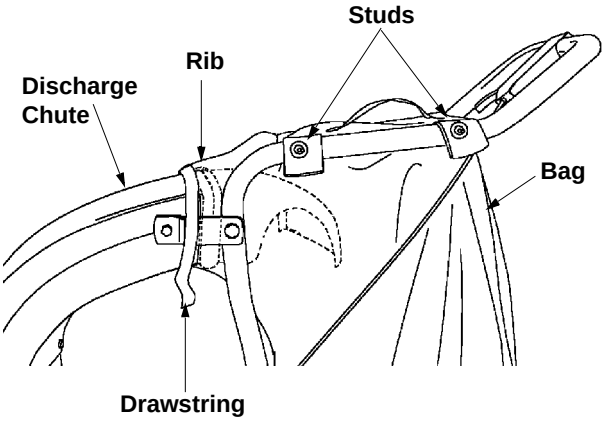


Figure 5

BEFORE USING YOUR CHIPPER-SHREDDER-VACUUM, REFER TO SECTION 3: IMPORTANT SAFE OPERATION PRACTICES OF THIS MANUAL. ALWAYS BE CAREFUL.

The operation of any chipper-shredder-vacuum can result in foreign objects being thrown into the eyes, which can damage your eyes severely. **Always wear the safety glasses provided with this unit or eye shields before chipping, or while performing any adjustments or repairs.** We recommend Wide Vision Safety Mask for over spectacles or standard glasses.

SECTION 5: OPERATION

IMPORTANT: Care should be taken not to shut off the engine or to run out of gasoline while operating the chipper-shredder-vacuum. Check the fuel level periodically to avoid running out of gasoline. Do not turn the engine off until all chipping is completed to avoid jamming. If the unit runs out of gas or is turned off while it is chipping or shredding it may be necessary to unclog the unit before it can be restarted. Refer to "Removing the flail screen" in the Maintenance section.

CONTROLS

DRIVE CLUTCH CONTROL

Squeezing the drive clutch control engages the drive mechanism to the rear wheels. Releasing the clutch control stops the rear wheels from driving. Release the drive clutch control to slow down when approaching an obstacle, making a turn or stopping. See Figure 6.

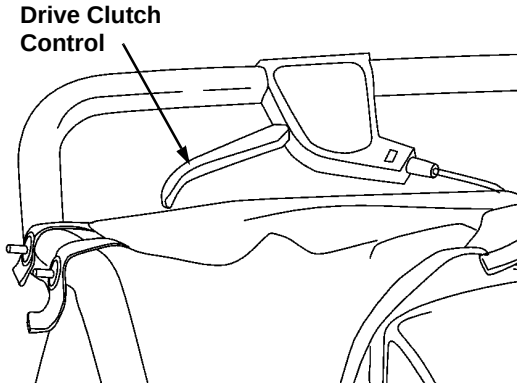


Figure 6

GAS AND OIL FILL-UP

Service the engine with gasoline and oil as instructed in the separate engine manual packed with your chipper-shredder-vacuum. **Read instructions carefully.**

NOTE: Your chipper-shredder-vacuum is shipped without oil; however, a small amount of oil may be present from the factory. Do not overfill.

WARNING: Never fill fuel tank indoors, with engine running or while engine is hot. Do not smoke when filling fuel tank.

TO START ENGINE

IMPORTANT: If unit shows any sign of motion with the drive clutch control disengaged, shut engine off immediately. Readjust as instructed in the "Drive Clutch Cable Adjustment" in the Adjustment Instructions.

WARNING: Be sure no one other than the operator is standing near the chipper-shredder-vacuum while starting or operating. Do not operate this chipper-shredder-vacuum unless the nozzle, discharge chute and bag have been properly installed.

1. Attach spark plug wire to spark plug.
2. Make certain drive clutch control is in the disengaged (released) position.
3. **Engines with choke lever:** Move choke lever on engine to CHOKE position. (A warm engine may not require choking.)

   Engines with primer:
   Prime engine as instructed in separate engine manual.
4. Move engine throttle control lever to FAST position.
5. Place one foot on the left rear wheel to prevent the unit from skidding while starting.
6. Grasp starter handle and pull rope out slowly until engine reaches start of compression cycle (rope will pull slightly harder at this point). Let the rope rewind slowly.

NOTE: You may hear a noise when reaching the start of the compression cycle. This noise is caused by the flails and fingers, which are part of the shredding mechanism, falling into place, and should be expected. In addition, the flails and fingers will be noisy after the engine is started, until the impeller reaches full speed.

7. Pull rope with a rapid, continuous, full arm stroke. Keep a firm grip on starter handle. Let rope rewind slowly. Do not let starter handle snap back against starter.
8. Repeat instructions 6 and 7 until engine fires. When engine starts, move choke control (if so equipped) gradually to RUN position.

TO STOP ENGINE

1. To stop engine, move throttle control lever to OFF position.
2. Disconnect spark plug wire and ground to prevent accidental starting while equipment is unattended.

IMPORTANT: Open the large zipper to empty the bag. Be certain the zipper is closed when operating the unit. See Figure 7.

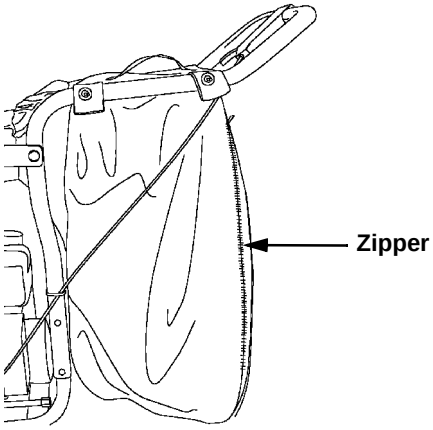


Figure 7

OPERATING THE CHIPPER

Do not attempt to shred or chip any material other than vegetation found in a normal yard (i.e., branches, leaves, twigs, etc.). Avoid fibrous plants such as tomato vines until they are thoroughly dried out. Material such as stalks or heavy branches up to 2" in diameter may be fed into the chipper chute. See Figure 8.

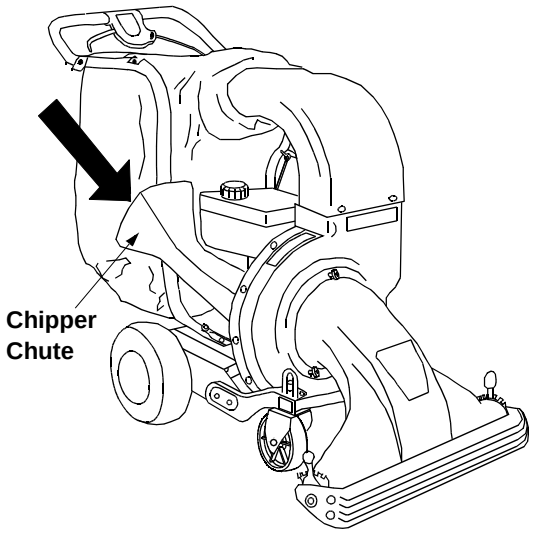


Figure 8

WARNING: Material up to a maximum of 2" in diameter may be fed into the chipper chute. Do not attempt to shred or chip any material larger than 2" in diameter. Personal injury or damage to the machine could result.

IMPORTANT: There is a flail screen located inside the housing in the discharge area. If the flail screen becomes clogged, remove and clean as instructed in SECTION 8: MAINTENANCE. For best performance, it is important to keep the chipper blades sharp. Refer to SECTION 8: MAINTENANCE. If the composition of the material being discharged changes (becomes stringy, etc.) or if the rate at which the material is discharged slows down considerably, it is likely that the chipper blades are dull and need to be sharpened or replaced.

SECTION 6: ADJUSTMENTS

WARNING: Do not at any time make any adjustment to the unit without first stopping engine and disconnecting spark plug wire.

FRONT CASTER WHEELS

Your chipper-shredder-vacuum is equipped with front caster wheels. The casters can be locked in a straight ahead position or position to swivel freely. Lift and place pins in the larger holes for locked, straight ahead operation. Place pins in smaller holes to allow casters to rotate freely. See Figure 9. Lock wheels in straight position when operating on slopes.

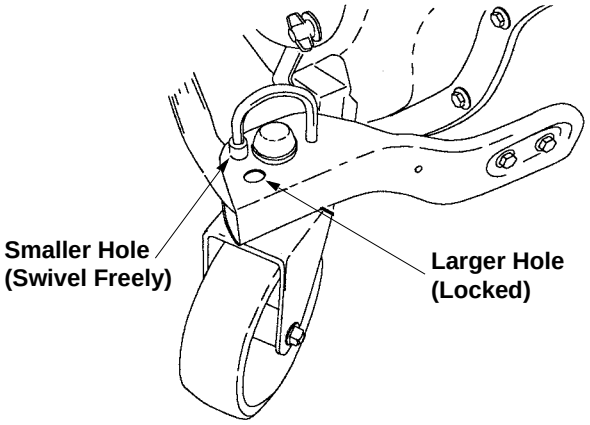


Figure 9

NOZZLE DOOR HEIGHT ADJUSTMENT

The nozzle door can be adjusted to any of five positions, ranging from 1/2" to 3" ground clearance. See Figure 10. The nozzle door height has to be adjusted according to the conditions. Slide the height adjustment lever forward or backward for adjusting the nozzle door upwards or downwards. Height must be adjusted equally.

NOTE: In general, raise the nozzle height to vacuum a thick layer of leaves; lower the nozzle height for smoother surfaces.

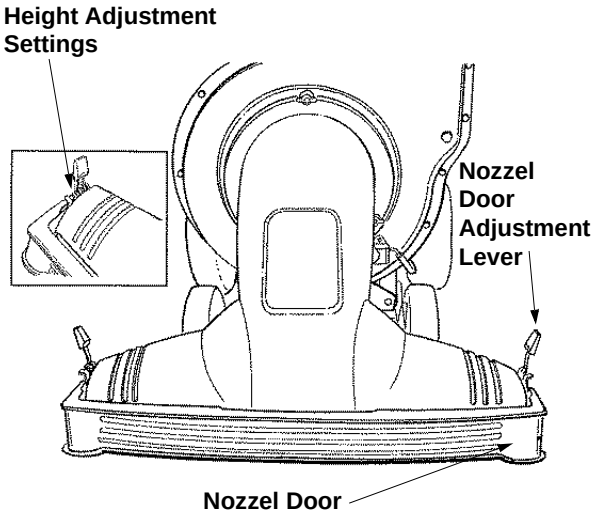


Figure 10

CARBURETOR ADJUSTMENT

WARNING: If any adjustments are made to the engine while the engine is running (e.g., carburetor), keep clear of all moving parts. Be careful of heated surfaces and muffler.

Minor carburetor adjustment may be required to compensate for differences in fuel, temperature, altitude or load. Do not make unnecessary adjustments. Factory settings are satisfactory for most applications and conditions. If adjustment is needed, refer to the separate engine manual packed with your chipper-shredder-vacuum.

NOTE: A dirty air cleaner will cause engine to run rough. Be certain air cleaner is clean and attached to the carburetor before adjusting carburetor.

DRIVE CLUTCH CABLE ADJUSTMENT

Adjust the drive clutch control if the chipper-shredder-vacuum moves forward with the drive clutch control disengaged, if the chipper-shredder-vacuum does not self-propel with the drive clutch control engaged, or if drive belt is slipping (unit hesitates while engine maintains the same speed).

Use the adjustment wheel located in the clutch control housing to tighten or loosen the clutch cable. See Figure 11.

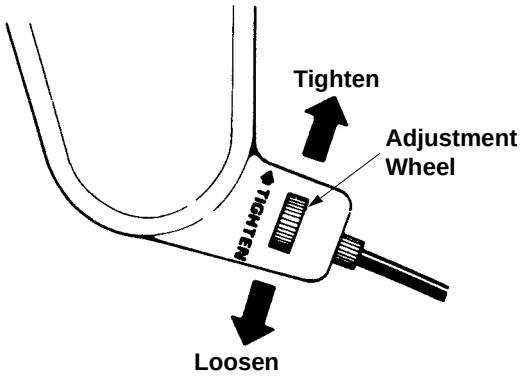


Figure 11

In addition, the adjustment wheel may also be used to determine the position in which the drive clutch control is engaged. If it is more comfortable to have the drive engaged with the lever further away from the handle, tighten the clutch cable.

SECTION 7: LUBRICATION

Wheels- Rear wheels are provided with light oil bearings. Place a few drops of SAE 30 oil on each bearing once a season.

Front caster wheels- Grease fitting are provided for easy lubrication of the swivel pins located on the front caster wheel.

Nozzle door height adjustment levers- Lubricate nozzle door height adjustment levers with light oil.

SECTION 8: MAINTENANCE

WARNING: Always stop engine and disconnect spark plug wire before cleaning, lubricating or performing any repairs or maintenance.

CLEANING

Clean the chipper-shredder-vacuum thoroughly after each use. Wash the bag periodically with water. Allow to dry thoroughly in the shade. Do not use heat.

ENGINE

Refer to the separate engine manual for engine maintenance instructions.

Maintain **engine oil level** as instructed in the separate engine manual packed with your unit. Read and follow instructions carefully.

Service **air cleaner** every 25 hours under normal conditions. Clean every few hours under extremely dusty conditions. Poor engine performance and flooding usually indicates that the air cleaner should be serviced. To service the air cleaner, refer to the separate engine manual packed with your unit.

The **spark plug** should be cleaned and the gap reset once a season. Spark plug replacement is recommended at the start of each season; check engine manual for correct plug type and gap specifications.

Clean the engine regularly with a cloth or brush.

Keep the cooling system (blower housing area) clean to permit proper air circulation which is essential to engine performance.

Be certain to remove all dirt and combustible debris from muffler area.

REMOVING THE FLAIL SCREEN

If the discharge area becomes clogged, remove the flail screen and clean area as follows.

1. Stop the engine. Make certain the chipper-shredder-vacuum has come to a complete stop. **Disconnect the spark plug wire** before unclogging the discharge chute.
2. Remove the vacuum bag from the unit.
3. Remove the four self-tapping screws from the bottom of the discharge chute, and the hex bolt, flat washer and hex nut from the top. Remove the discharge chute assembly. See Figure 12.

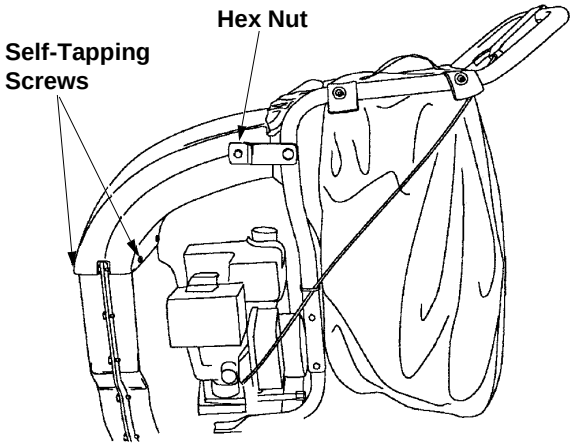


Figure 12

4. Remove the two hex bolts and hex nuts which extend through the housing. Lift the flail screen from inside the housing. See Figure 13.

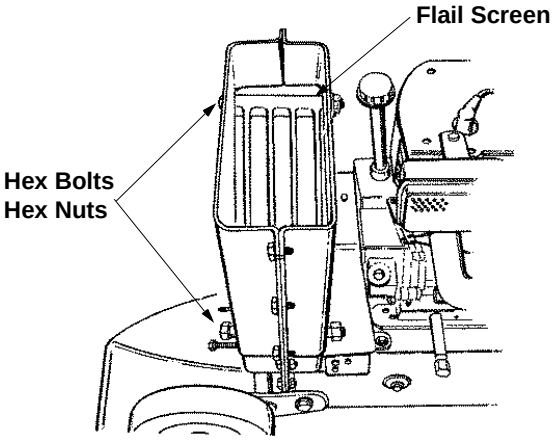


Figure 13

5. Clean the screen by scraping or washing with water. Reinstall the screen.

NOTE: Be certain to reassemble the flail screen with the curved side down as shown in Figure 13.

SHARPENING OR REPLACING CHIPPER BLADES

1. Disconnect the spark plug wire and ground it away from the spark plug.
2. Remove the flail screen as instructed in the previous section.
3. Remove the plastic belt cover on the front of the engine by removing the two self-tapping screws. See Figure 14.

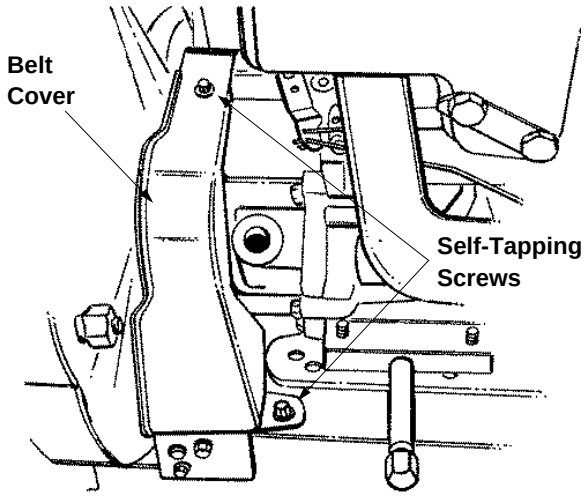


Figure 14

4. Open access plate by removing the two hex lock nuts. See Figure 15.

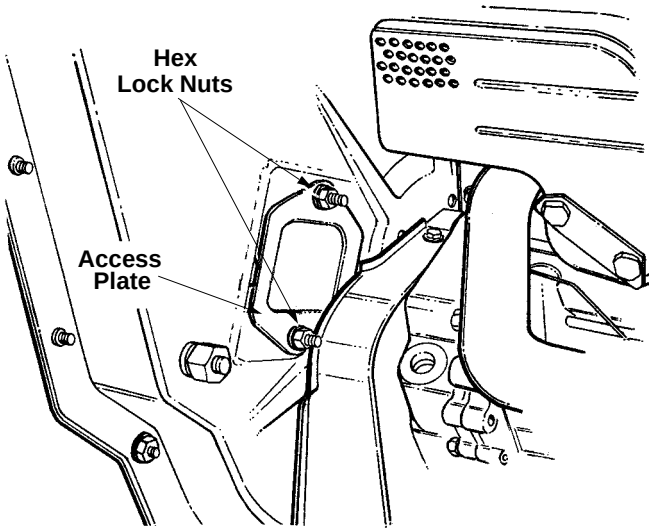


Figure 15

5. Locate one of the chipper blades in the access plate opening by rotating the impeller assembly by hand. Remove the blade using a 3/16" allen wrench on the outside of the blade and 1/2" wrench on the impeller assembly, inside the housing.
6. Remove the other blade in the same manner. Replace or sharpen blades. If sharpening, make certain to remove an equal amount from each blade. Reassemble in reverse order.

NOTE: Make certain blades are reassembled with the sharp edge facing upward, as viewed from the access plate opening.

BELT REMOVAL AND REPLACEMENT

NOTE: Because the engine on this unit has a tapered crankshaft, a special impeller removal tool (part number 753-0638) is required to remove the impeller assembly in step 14. For help with this step, contact your local service dealer.

WARNING: Disconnect the spark plug wire and ground it away from the spark plug.

1. Disconnect the spark plug wire and ground it away from the spark plug.
2. Drain the gasoline and oil from the chipper-shredder-vacuum.
3. Remove the three wing nuts that secure the nozzle to the outer housing, and remove the nozzle. See Figure 4.
4. Remove the bag from the chipper-shredder-vacuum.
5. Remove the four self-tapping screws that secure the discharge chute to the housing. See Figure 16.
6. Remove the flange nut which secures the support bracket to the handle. See Figure 16. Pivot support bracket up and remove discharge chute from unit.

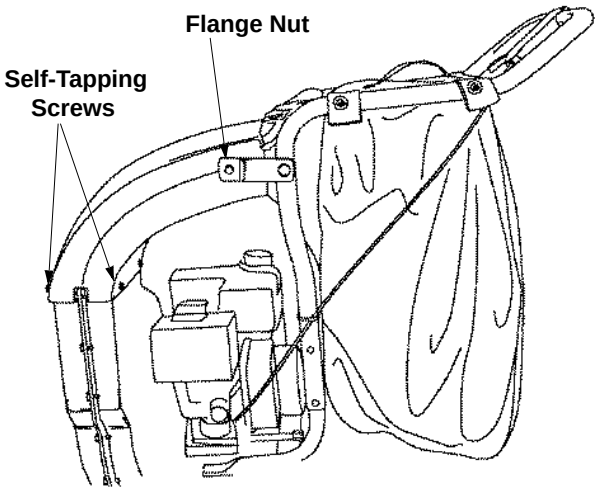


Figure 16

7. Remove the two self-tapping screws that secure the plastic belt cover. See Figure 14. Lift off belt cover.

8. Tip the unit backwards so that it rest on the handles.
9. Remove the lower belt guard by removing the two self-tapping screws. See Figure 17.

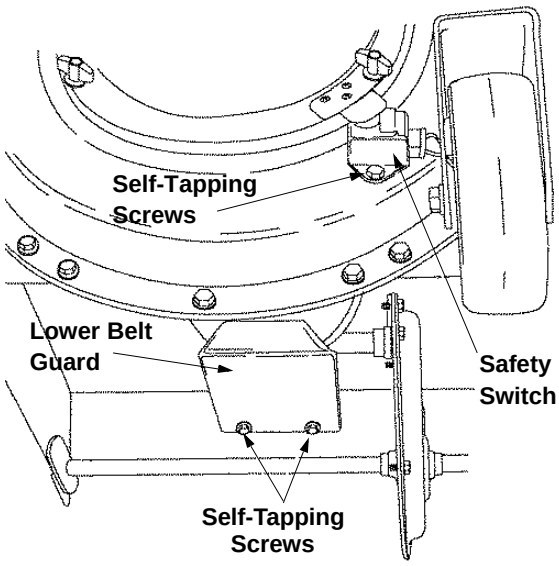


Figure 17

10. Remove the safety switch from the front of the outer housing by removing the two self-tapping screws. See Figure 17.
11. Remove the two hex bolts and hex lock nuts which extend through the housing. Lift the flail screen out of the housing. See Figure 13.
12. Remove the outer housing and housing blades by removing the fourteen self-tapping screws.
13. Remove the hex bolt, lock washer and flat washer that secures the impeller assembly to the crankshaft. See Figure 18.

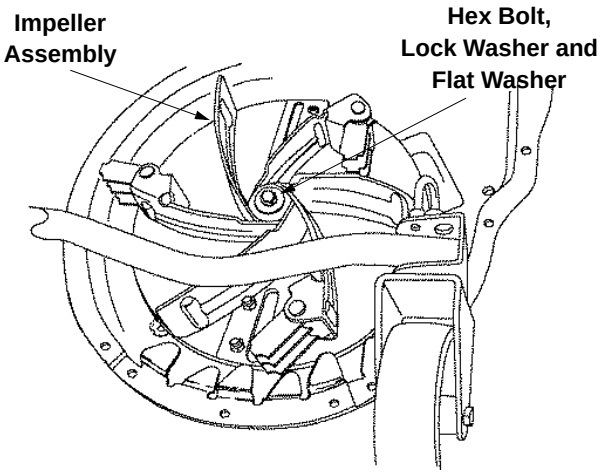


Figure 18

14. Thread the special impeller tool (see note on previous page) into the crankshaft. Stop when the impeller assembly can move on the crankshaft.
15. If the old belt is still on the unit, cut belt and remove.
16. Remove the impeller assembly from the crankshaft. Unthread the special impeller tool from the impeller assembly.
17. Remove the inner housing and mounting adapter by removing the five hex bolts and two hex nuts. See Figure 19.

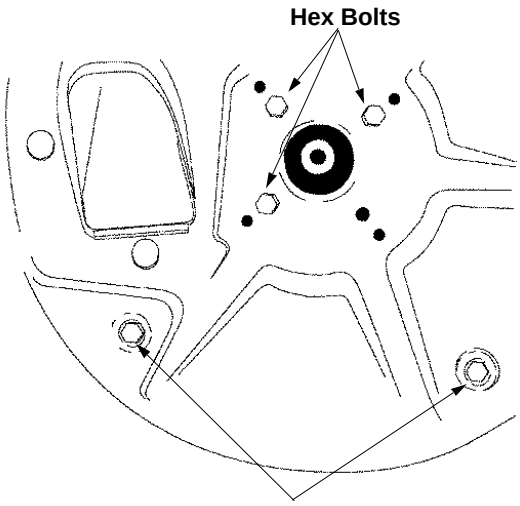


Figure 19

18. Insert the new belt between the frame and transmission pulley. It may be necessary to use a screwdriver to pry the frame away from the pulley in order to insert the belt. Apply a slight upward pressure, being careful not to damage the pulley. Place belt around transmission pulley. See Figure 20.

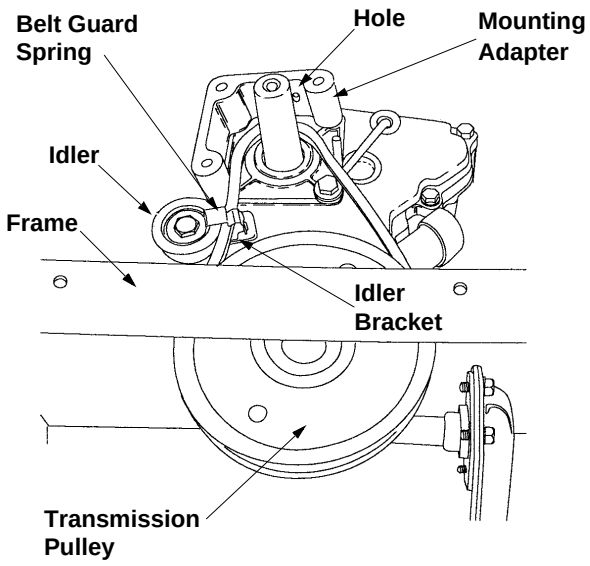


Figure 20

19. Press down on the belt guard spring by the idler pulley and release spring from the slot on the idler bracket. Place the belt on the idler pulley and place belt guard spring back into the slot on the idler bracket. See Figure 20.
20. Place the mounting adapter against the engine. Make sure the hole in the mounting adapter is facing up. See Figure 20.
21. Place the inner housing against mounting adapter and frame. Secure with the five hex bolts and two hex nuts removed in step 17.
22. Slide the impeller assembly onto the crankshaft. Place a screwdriver under the belt, and turn the impeller assembly counterclockwise to seat the belt into the slot on the impeller. Make sure the belt is routed inside all belt guards.
23. Secure the impeller assembly to the crankshaft using the hex bolt, lock washer and flat washer that was removed in step 13. Torque the bolt to 550 in. lbs. min., 700 in. lbs. max.
24. Place the housing blades against the inner housing. The blades must be placed as shown in Figure 21.

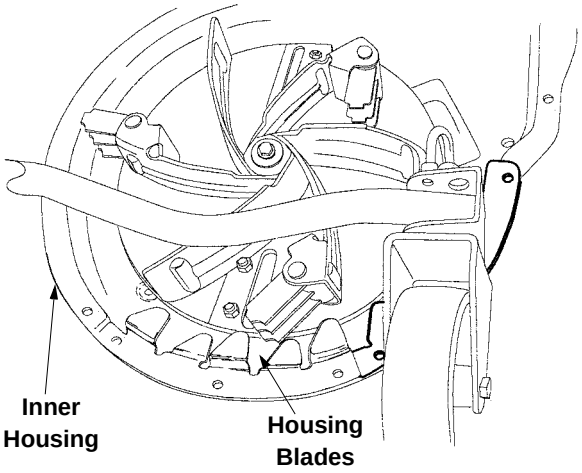


Figure 21

25. Place the outer housing against the inner housing. Insert two screwdrivers into the holes as shown in Figure 22. This will hold the blades in place while attaching the outer housing. Secure with the fourteen self tapping screws that were removed in step 12. Start all screws first before tightening.

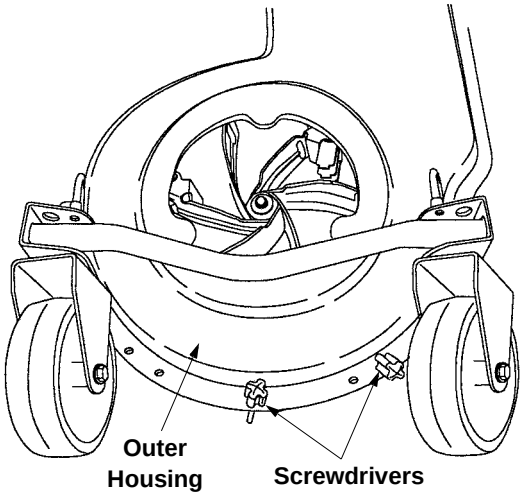


Figure 22

26. Finish reassembling, following step 1 through step 11 in reverse order.

SECTION 9: OFF-SEASON STORAGE

The following steps should be taken to prepare your chipper-shredder-vacuum for storage.

1. Remove all dirt from exterior of engine and equipment.
2. Refer to engine manual for correct engine storage instructions.
3. Wipe unit with an oiled rag to prevent rust (use a light oil or silicone), especially if storing in an unventilated or metal storage shed.
4. Store in a dry, clean area. Do not store next to corrosive materials, such as fertilizer.

SECTION 10: OPTIONAL EQUIPMENT

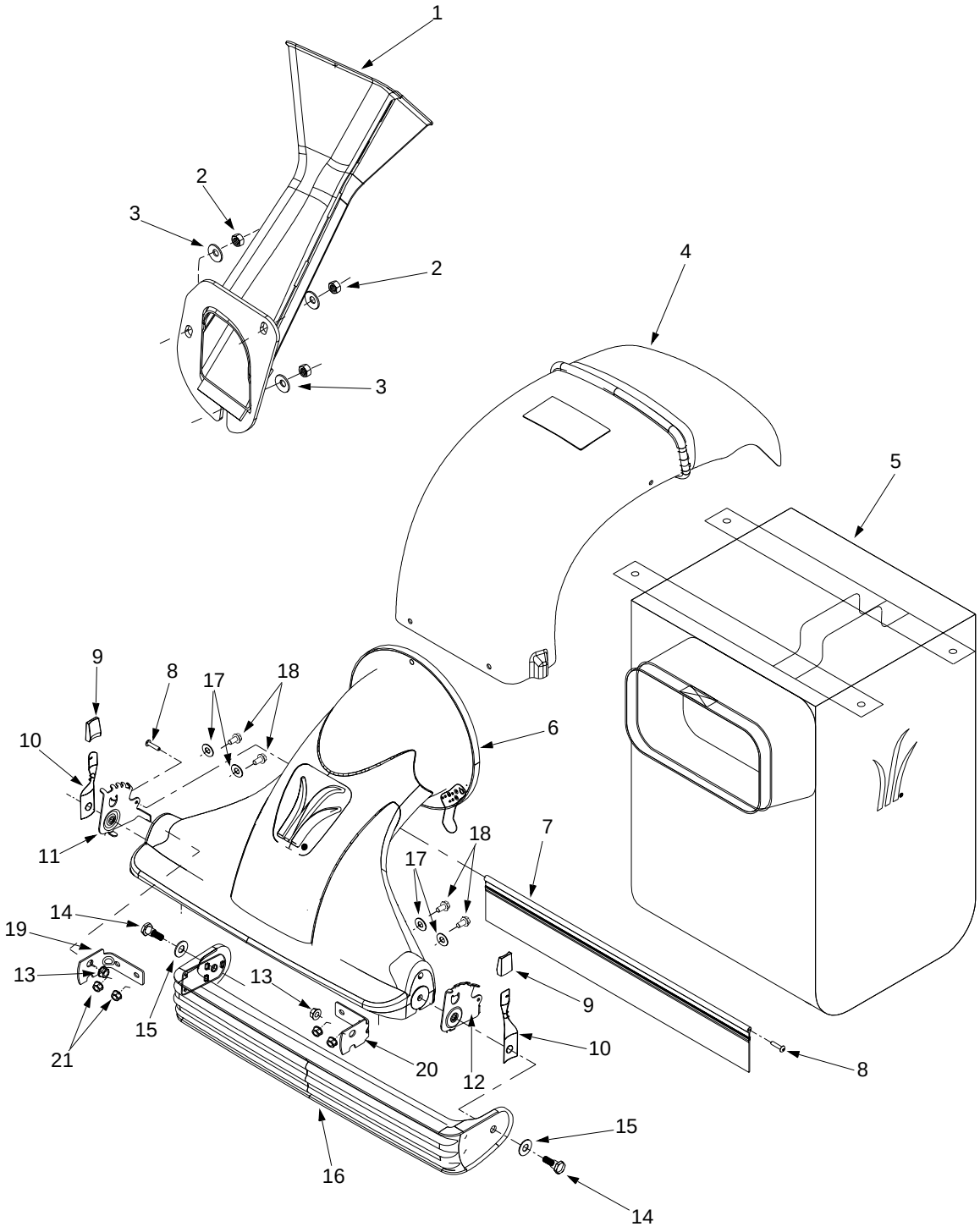
Hose Attachment Kit Model 290-005 is available as optional equipment.

SECTION 11: TROUBLE SHOOTING GUIDE

Trouble	Possible Cause(s)	Corrective Action
Engine fails to start	Dirty air cleaner. Fuel tank empty or stale fuel. Spark plug wire disconnected. Cannot pull recoil cord. Choke not in ON position. Faulty spark plug. Nozzle safety switch not depressed.	Refer to the engine manual packed with your unit. Fill tank with clean, fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is added. Connect wire to spark plug. Obstruction lodged in impeller. Stop immediately and disconnect spark plug wire. Remove lodged object. Move switch to ON position. Clean, adjust gap or replace. Adjust metal tab so it depresses the safety switch.
Loss of power; operation erratic	Spark plug wire loose. Unit running on CHOKE. Blocked fuel line or stale fuel. Water or dirt in fuel system. Carburetor out of adjustment. Low engine RPM. Dirty air cleaner.	Connect and tighten spark plug wire. Move choke lever to OFF position. Clean fuel line; fill tank with clean fresh gasoline. Fuel will not last over thirty days unless a fuel stabilizer is used. Disconnect fuel line at carburetor to drain fuel tank. Refill with fresh fuel. Refer to the engine manual packed with your unit. Always run engine at full throttle. Refer to the engine manual packed with your unit.
Engine overheats	Carburetor not adjusted properly. Dirty air cleaner. Engine oil level low.	Refer to the engine manual packed with your unit. Refer to the engine manual packed with your unit. Fill crankcase with proper oil.
Too much vibration	Loose parts or damaged impeller.	Stop engine immediately and disconnect spark plug wire. Have unit serviced by a an authorized service dealer.
Unit does not discharge	Discharge chute clogged. Foreign object lodged in impeller. Low engine RPM. Vacuum bag is full.	Stop engine immediately and disconnect spark plug wire. Clean flail screen and inside of blower housing. See Maintenance section of this manual. Stop engine immediately and disconnect spark plug wire. Remove lodged object. Always run engine at full throttle. Empty bag.
Rate of discharge slows considerably or composition of discharged material changes	Low engine RPM. Chipper blades dull.	Always run engine at full throttle. Replace chipper blades or see your authorized service dealer.

NOTE: For repairs beyond the minor adjustments above, contact your local authorized service dealer.

Model 203B

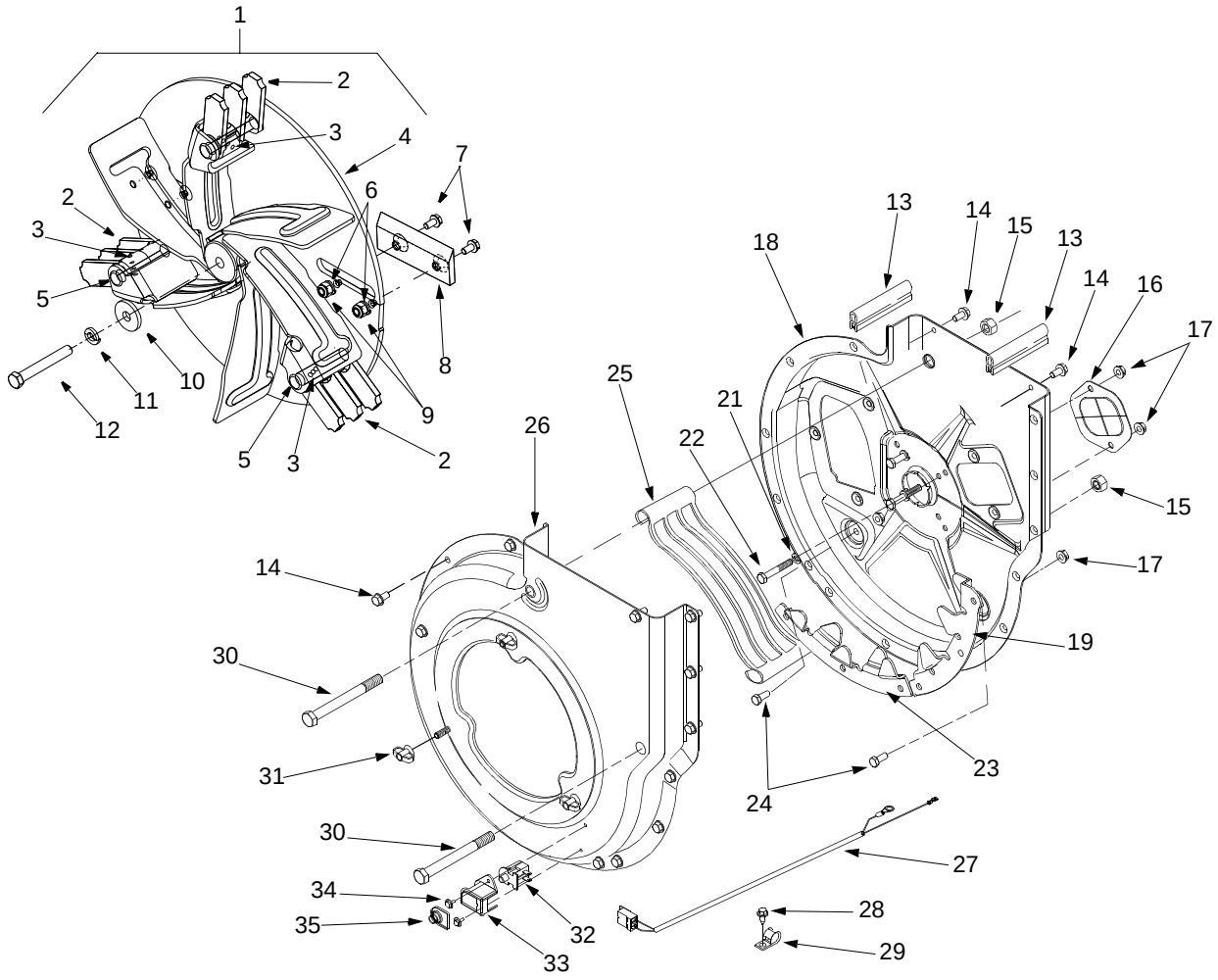


Model 203B

REF. NO.	PART NO.	DESCRIPTION
1	681-0095	Chipper Chute
2	712-3010	Hex Nut 5/16-18
3	736-0242	Bell Washer .340 ID x .872 OD
4	731-1690A	Discharge Chute
5	764-0492	Bag
6	631-0069	Nozzle Asm
7	731-1831	Nozzle Flap
8	710-0969	Screw
9	720-0190	Height Adjustment Knob
10	732-0754	Spring Lever
11	781-0702	Index Bracket RH
12	781-0703	Index Bracket LH
13	712-0431	Hex Flange Lock Nut 3/8-16
14	738-0913	Shoulder Screw
15	736-3084	Flat Washer .510 x 1.12 x .060
16	631-0047	Door Asm
17	736-0173	Flat Washer .28 ID x .74 OD
18	710-0258	Hex Cap Screw 1/4-20 x .625
19	781-0704	Nozzle Reinforcement Bracket RH
20	781-0705	Nozzle Reinforcement Bracket LH
21	712-3027	Hex Flange Lock Nut 1/4-20

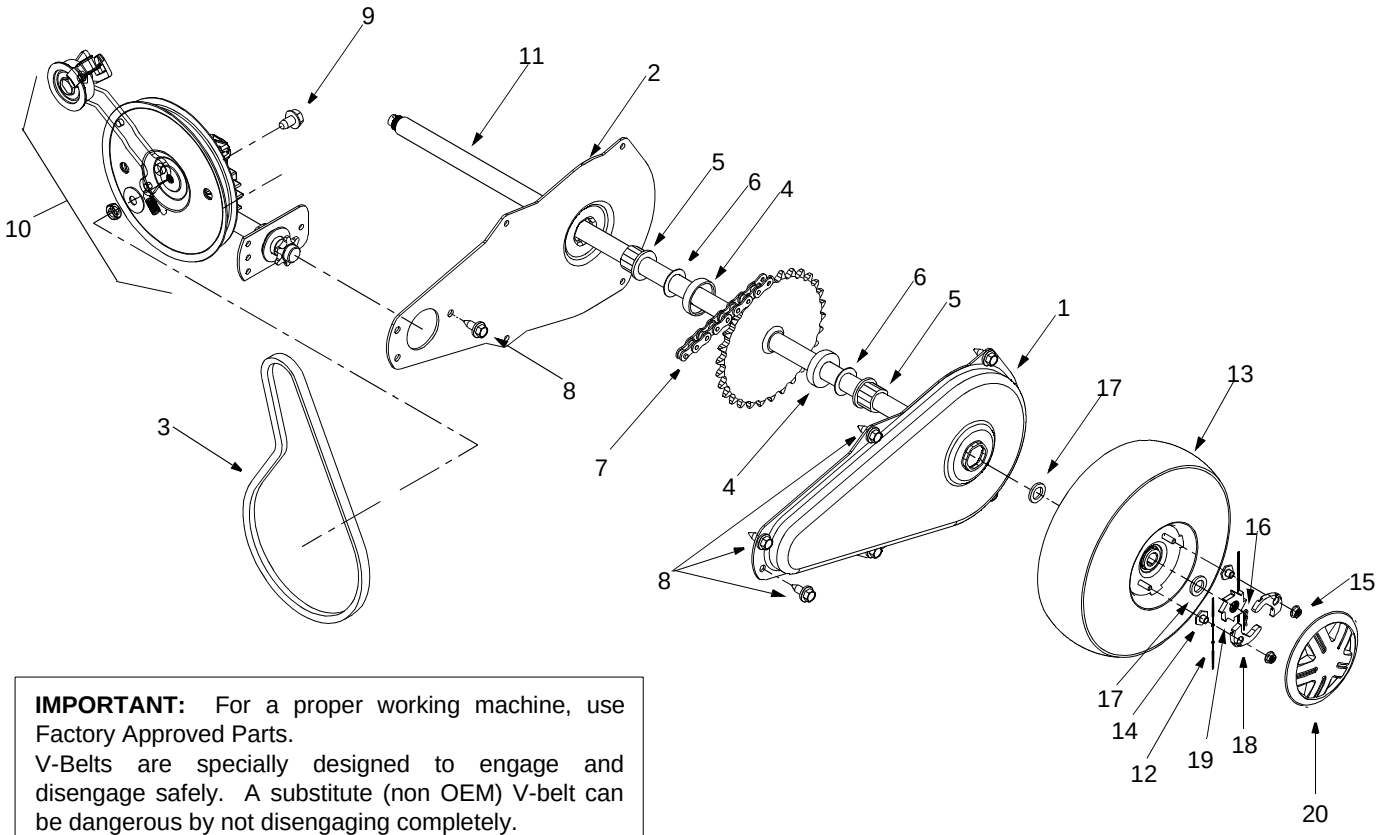
PART NO.	DESCRIPTION
777S30183	Label—Warning Back Flail Housing
777I20123	Label—Lock Caster Wheel
777D00183	Label—Yardman 5 HP, O.H.V.
777D00121	Label—Yardman 5 HP Chipper, Shredder, Vac.
777D01301	Label—1-800 Have Model # Ready
777S30131	Label—Caution Do Not Operate
777S30041	Label—Warning / Avoid Injury

Model 203B



REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	681-0108	Impeller Ass'y Complete	18	681-0098	Housing Ass'y Inner Flail
2	719-0329	Flail Blade	19	781-0599	Upper Shredder Blade
3	715-0166	Spiral Pin	21	736-0119	Lock Washer 5/16
4	681-0107	Impeller Assembly	22	710-0772	Hex Cap Screw 5/16-18 x 2
5	711-0833B	Clevis Pin	23	781-0653	Flail Housing Blade
6	736-0119	Lock Washer 5/16	24	710-3008	Hex Cap Screw 5/16-18 x .75
7	710-1054	Cap Screw 5/16-24 x 1.0	25	719-0326	Discharge Screen
8	781-0490	Chipper Blade	26	681-0060	Housing Ass'y Outer Flail
9	712-0411	Hex Lock Nut 5/16-24	27	629-0241A	Wire Harness
10	736-0247	Flat Washer .406 x 1/1/4	28	710-0896	Hex Washer Screw 1/4-14
11	736-0217	Lock Washer 3/8	29	726-0272	Clamp
12	710-1273	Hex Cap Screw 3/8-24 x 2.75	30	710-0382	Hex Cap Screw 1/2-13 x 5.0
13	723-0438	Rubber Seal	31	712-0421	Knob 5/16-18
14	710-0604	Hex Washer Screw 5/16-18	32	725-3166	Switch
15	712-0384	Hex Lock Nut 1/2-13	33	731-1613	Safety Switch Mounting Cover
16	781-0627	Chipper Blade Cover	34	710-1268	Hex Washer Screw
17	712-3004A	Hex Flange Lock Nut 5/16-18	35	725-1700	Switch Cover

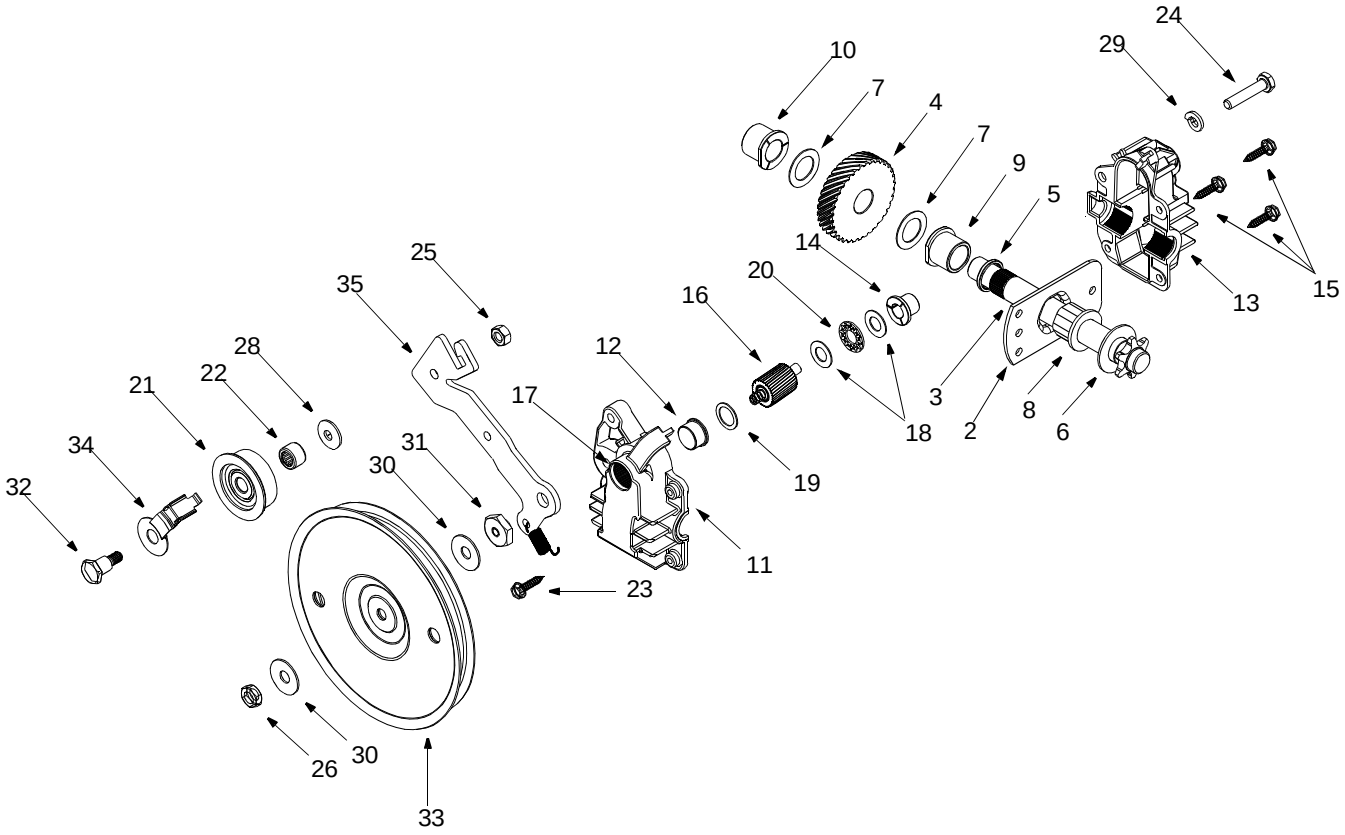
Model 203B



IMPORTANT: For a proper working machine, use Factory Approved Parts.
V-Belts are specially designed to engage and disengage safely. A substitute (non OEM) V-belt can be dangerous by not disengaging completely.

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	781-0677	Chain Case LH		634-0129	Rim Asm Complete
2	781-0676	Chain Case RH		734-0210	Pneumatic Tire 10.0 x 4.0
3	754-0457	V-Belt		734-0255	Valve
4	748-0313	Spacer		741-0487A	Flange Bearing .632 ID
5	741-0413	Hex Flange Bearing	14	712-0456	Hex Nut 1/4-20
6	736-0336	Flat Washer	15	712-3027	Hex Flanged Lock Nut 1/4-20
7	713-0422	Chain	16	714-0104	Cotter Pin
8	710-0896	Hex Washer Screw 1/4-14	17	736-0366	Flat Washer 5/8 ID x 1.0 OD
9	710-0603	Hex Washer Screw 5/16	18	748-0188B	Pawl LH .345 ID
10	618-0256	Transmission Asm		748-0381	Pawl RH .345 ID
11	611-0063	Axle Asm	19	748-0405	Wheel Ratchet 1.62 OD x .5 serr
12	10622B	Plastic Spring Ratchet	20	731-1825	Hubcap
13	634-0136	Wheel Complete 10 x 4 x 4			

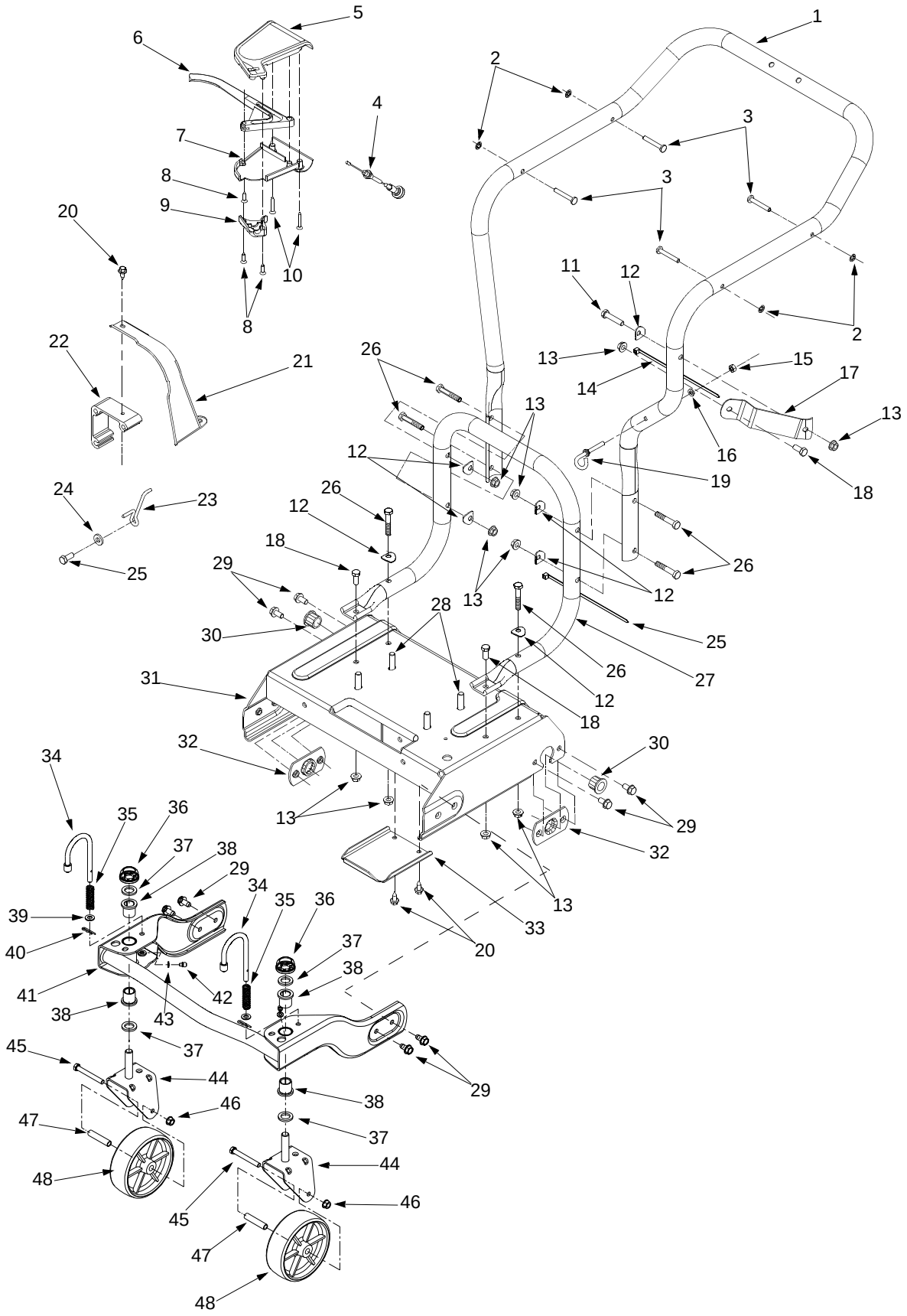
Model 203B



REF. NO.	PART NO.	DESCRIPTION
1	618-0255	Transmission Assembly Complete
2	16500A	Hex Bearing Cup
3	711-1118	Output Shaft 6T Sprocket
4	717-1432	Helical 34T Gear
5	721-0213	Oil Seal
6	736-0187	Flat Washer .64 ID x 1.24 OD
7	736-0336	Flat Washer 5/8 x 1.0
8	741-0413	Hex Flange Bearing .631 ID
9	741-0414	Flange Bearing .629 ID
10	741-0415	Flange Bearing .566 ID
11	719-0325	Lower Housing
12	748-0373	Flange Bearing .503 ID
13	719-0324A	Upper Housing
14	748-0208A	Flange Bearing .378 ID
15	710-0589	Hex Washer Screw #10-16 x .75
16	717-1433	Pinion Shaft 10T
17	721-0329	Oil Seal
18	736-0314	Thrust Washer .382 ID x .684 OD

REF. NO.	PART NO.	DESCRIPTION
19	736-0520	Flat Washer .504 ID x .70 OD
20	741-0479	Thrust Bearing .375 ID x .812 OD
21	656-0008	Pulley Ass'y Idler w/ Bearing
22	741-0556	Needle Bearing .375 ID x .375 OD
23	710-0589	Hex Screw #10-16 x .75
24	710-1062	Hex Cap Screw 1/4-20 x 1.25
25	712-0138	Hex Nut 1/4-28
26	712-3045	Hex Jam Nut 5/16-24 LH Thd
27	732-0357A	Extension Spring 1.12 Lg
28	736-0270	Bell Washer .265 ID x .75 OD
29	736-0329	Lock Washer 1/4
30	736-0425	Bell Washer .325 ID x .930 OD
31	738-0440	Shoulder Spacer .375 ID x .165 OD
32	738-0826	Shoulder Bolt 1/4-28 x .375
33	756-0618	Flat Pulley 5.06 Dia
34	782-7569	Belt Keeper
35	782-7570	Idler Bracket

Model 203B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Model 203B

REF. NO.	PART NO.	DESCRIPTION	REF. NO.	PART NO.	DESCRIPTION
1	749-0996	Upper Handle	25	710-0157	Hex Cap Screw 5/16-24 x .75
2	1539-019	Push Nut	26	710-3103	Hex Cap Screw 5/16-18 x 1.75
3	711-0737	Stud Pin .250 x 1.75	27	749-0980	Lower Push Handle
4	746-0714	Clutch Cable 56"	28	710-0502A	Screw 3/8-16 x 1.25
5	731-1735	Upper Clutch Cover	29	710-0604	Hex Washer Screw 5/16-18 x .625
6	731-0620	Drive Lever	30	741-0413	Hex Flange Bearing .631 x .720
7	731-1736	Lower Clutch Cover	31	681-0097A	Frame Asm
8	710-0841	Screw #10-12 x .750	32	781-0700	Axle Bracket
9	731-1059	Mounting Cable Cap	33	781-0697	Transmission Cover
10	710-1331	Screw #10-16 x 1.25	34	747-0924	Lock Pin
11	710-0805	Hex Cap Screw 5/16-18 x 1.50	35	732-0306	Compression Spring
12	736-0451	Shoulder Washer .320 ID x .93 OD	36	726-0214	Push Cap
13	712-3004A	Hex Flange Lock Nut 5/16-18	37	736-0366	Flat Washer 5/8 ID x 1.0 OD
14	725-0157	Cable Tie	38	741-0487A	Flange Bearing .632 ID
15	712-0138	Hex Nut 1/4-28	39	736-0264	Flat Washer .330 ID x .630 OD
16	736-0329	Lock Washer 1/4	40	714-0104	Cotter Pin
17	781-0647	Discharge Chute Bracket	41	681-0087	Bracket Asm
18	710-3008	Hex Cap Screw 5/16-18 x .75	42	737-3000	Grease Fitting 3/16
19	747-0815	Eye Bolt	43	736-0931	Flat Washer.203 ID x .403 OD
20	710-0896	Hex Washer Screw 1/4-14 x .625	44	681-0088	Bracket Asm
21	731-1646	Belt Cover	45	710-0521	Hex Cap Screw 3/8-16 x 3.0
22	719-0359	Engine Mounting Adapter	46	712-0431	Flange Lock Nut 3/8-16
23	747-0929A	Belt Keeper	47	750-1042	Spacer
24	736-3008	Flat Washer .344 x .75 x .12	48	734-1804	Wheel 6.0 x 2.0

NOTE: For **painted parts**, please refer to the list of color codes below. Please add the applicable color code, wherever needed, to the part number to order a replacement part. For instance, if a part numbered 700-xxxx is painted Oyster Gray, the part number to order would be 700-xxxx-062.

Yard-Man Green: 0665
Yard-Man Yellow: 0674
Powder Black: 0637

MANUFACTURER'S LIMITED WARRANTY FOR:

YARD-MAN™ by MTD®

The limited warranty set forth below is given by MTD PRODUCTS INC ("MTD") with respect to new merchandise purchased and used in the United States, its possessions and territories.

MTD warrants this product against defects in material and workmanship for a period of two (2) years commencing on the date of original purchase and will, at its option, repair or replace, free of charge, any part found to be defective in material or workmanship. This limited warranty shall only apply if this product has been operated and maintained in accordance with the Operator's Manual furnished with the product, and has not been subject to misuse, abuse, commercial use, neglect, accident, improper maintenance, alteration, vandalism, theft, fire, water or damage because of other peril or natural disaster. Damage resulting from the installation or use of any accessory or attachment not approved by MTD Products Inc. for use with the product(s) covered by this manual will void your warranty as to any resulting damages.

Normal wear parts or components thereof are subject to separate terms as follows: All normal wear part or component failures will be covered on the product for a period of 90 days regardless of cause. After 90 days, but within the two year period, normal wear part failures will be covered ONLY IF caused by defects in material or workmanship of OTHER component parts. Normal wear parts and components include, but are not limited to, belts, blades, blade adapters, grass bags, rider deck wheels, seats, snow thrower skid shoes, shave plates and tires. Batteries are covered by a 90-day limited replacement warranty.

HOW TO OBTAIN SERVICE: Warranty service is available, WITH PROOF OF PURCHASE THROUGH YOUR LOCAL AUTHORIZED SERVICE DEALER. To locate the dealer in your area, please check for a listing in the Yellow Pages or contact the Customer Service Department of MTD PRODUCTS INC by calling 1-800-800-7310 or writing to P.O. Box 368022, Cleveland, Ohio 44136-9722. No product returned directly to the factory will be accepted unless prior written permission has been extended by the Customer Service Department of MTD PRODUCTS INC.

This limited warranty does not provide coverage in the following cases:

a. The engine or component parts thereof. These items carry a separate manufacturer's warranty. Please refer to the applicable manufacturer's warranty on these items.
b. Routine maintenance items such as lubricants, filters, blade sharpening and tune-ups, or adjustments such as brake adjustments, clutch adjustments or deck adjustments; and normal deterioration of the exterior finish due to use or exposure.
c. Log splitter pumps, valves and cylinders have a separate one year warranty.
d. MTD does not extend any warranty for products sold or exported outside of the United States of America, its possessions and territories, except those sold through MTD's authorized channels of export distribution.

No implied warranty, including any implied warranty of merchantability or fitness for a particular purpose, applies after the applicable period of express written warranty above as to the parts as identified. No other express warranty or guaranty, whether written or oral, except as mentioned above, given by any person or entity, including a dealer or retailer, with respect to any product shall bind MTD. During the period of the Warranty, the exclusive remedy is repair or replacement of the product as set forth above. (Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you.)

The provisions as set forth in this Warranty provide the sole and exclusive remedy arising from the sales. MTD shall not be liable for incidental or consequential loss or damages including, without limitation, expenses incurred for substitute or replacement lawn care services, for transportation or for related expenses, or for rental expenses to temporarily replace a warranted product. (Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above exclusion or limitation may not apply to you.)

In no event shall recovery of any kind be greater than the amount of the purchase price of the product sold. Alteration of the safety features of the product shall void this Warranty. You assume the risk and liability for loss, damage, or injury to you and your property and/or to others and their property arising out of the use or misuse or inability to use the product.

This limited warranty shall not extend to anyone other than the original purchaser, original lessee or the person for whom it was purchased as a gift.

How State Law Relates to this Warranty: This limited warranty gives you specific legal rights, and you may also have other rights which vary from state to state.